

Ms. Celeste Cantú
Executive Director
State Water Resources Control Board
1001 I Street
Sacramento, CA 95814

Dear Ms. Cantú:

Thank you for your efforts to develop the Section 303(d) water body list for 2002. I commend the State and Regional Boards for their diligent efforts to improve the water body assessment process that supported the 2002 listing decisions, and I am pleased that the State and EPA agreed on more than 99% of all assessment determinations. We received California's 2002 Section 303(d) submittal on March 3, 2003 and supporting documentation and information in several followup submittals. We carefully reviewed the State's listing decisions, assessment methodology, and supporting data and information. Based on this review, we have determined that California's 2002 list of 679 water quality limited segments still requiring TMDLs partially meets the requirements of Section 303(d) of the Clean Water and EPA's implementing regulations.

By this order, EPA hereby partially approves and partially disapproves California's 2002 Section 303(d) list. EPA approves the State's decision to list the 679 waters and associated pollutants identified at Tab 1 of the California listing report along with the State's priority rankings for these waters and pollutants. EPA disapproves the State's decision not to list 5 additional water bodies, and additional pollutants for 15 waters already listed by the State, as we find these waters and pollutants meet the federal requirements for listing under Section 303(d). The statutory and regulatory requirements, and a summary of our review of California's compliance with each requirement, are described in Enclosure 1.

We are identifying for inclusion on California's Section 303(d) list 5 waters and associated pollutants, and additional pollutants for 15 waters already listed by California. The specific waters and pollutants added, are identified in Table 1, which is enclosed with this letter. We will now open a public comment period to receive comments concerning our decision to add waters and pollutants to the State's Section 303(d) list.

EPA identified three situations in which waters and pollutants do not attain water quality standards but were not listed on the Section 303(d) list by the State:

1. Available data indicate that 14 waters substantially exceed the State's numeric water quality standards for dissolved oxygen, boron, and other pollutants.
2. Available fish tissue data for 3 waters exceed widely accepted tissue screening values used to assess potential water quality impairment and exceedances of narrative water quality standards.
3. The implementation programs relied upon by the State as the basis for removing 3 water body-pollutant combinations from the Section 303(d) list are not sufficiently likely to result in attainment of water quality standards for certain pollutants. As a result, EPA concludes that these waters and pollutants meet the listing requirements.

EPA's partial approval and partial disapproval of California's Section 303(d) list does not extend to any water bodies located within tribal lands, as defined in 18 U.S.C. Section 1151. EPA's decision to identify additional waters and pollutants for inclusion on the Section 303(d) list also does not apply to any waters located within tribal lands.

The public participation process sponsored by the State and Regional Boards included solicitations of public comment through newspaper advertisements, mailing lists, and several public hearings, and preparation of a responsiveness summary explaining how the State considered public comment in the final listing decisions. We find that the State's public participation activities were consistent with federal requirements.

If you have questions concerning this decision or on any of the supporting analysis, please call me at (415) 972-3572 or call David Smith at (415) 972-3416. We would be pleased to brief you and Board members, if you wish, on this matter.

Sincerely yours,

Alexis Strauss
Associate Regional Administrator

Enclosures

cc: SWRCB Members

Table 1: Waters added to 303(d) list for California

Description of Table Columns:

A Water Body@ column identifies the water bodies on the 303(d) list.

APollutants@ column identifies the specific pollutants for which the water bodies were found to exceed water quality standards.

ABasis for Listing@ column identifies the basis for individual listing decisions.

APriority Ranking@ column indicates the priority ranking for TMDL development associated with an individual listing decision (H = High; M = Medium; L = Low priority)

Water Body (Regional Board)	Pollutants	EPA basis for listing	Water already listed by State for other pollutants?	Priority Ranking
Humboldt Bay (1)	PCBs	fish tissue levels exceed maximum tissue residue levels in 80% of samples (n=5)	N	L
Laguna de Santa Rosa (1)	total nitrogen and total phosphorus	TN levels exceed EPA recommended criteria values in 93% of samples (n=323); TP levels exceed EPA recommended criteria values in 88% of samples (n=324)	Y	L
Lake Merced (2)	dissolved oxygen and pH	DO and pH levels exceed numeric objectives in 46-83% of samples (n=14)	N	L
Lake Merritt (2)	dissolved oxygen	DO levels exceed numeric objectives in 24% of samples (n=126); State provided inadequate basis for delisting from 1998 list	Y	L
San Francisco Bay segments: Sacramento/San Joaquin Delta Lower San Francisco Bay San Pablo Bay Suisun Bay (2)	nickel	Currently applicable basin plan objective for nickel exceeded 102 times since 1993	Y	L
Chumash Creek (3)	dissolved oxygen	DO levels exceed numeric objectives in 15% of samples (n=230)	Y	L
Llagas Creek (3)	dissolved oxygen	DO levels exceed numeric objectives in 18% of samples (n=90)	Y	L
Los Osos Creek (3)	dissolved oxygen	DO levels exceed numeric objectives in 18% of samples (n=251)	Y	L

Orcutt Solomon Creek (3)	boron	Boron levels exceed numeric objectives in 15% of samples (n=34)	Y	L
San Antonio Creek (3)	boron	Boron levels exceed numeric objectives in 67% of samples (n=6)	Y	L
Calleguas Creek Reach 4 (4)	boron, sulfate, total dissolved solids	Pollutant levels exceed numeric beneficial use protection guidelines [boron, 85% of samples (n=13); sulfate, 93% of samples, n=15; TDS, 80% of samples, n=15]	Y	M
San Gabriel River Reach 1 San Gabriel River Reach 3 Coyote Creek (4)	toxicity	Data indicate very high current toxicity levels; submittal has not demonstrated that pending ammonia controls will result in attainment of toxicity water quality standards	Reach 1- Y Reach 3- N Coyote- Y	M
Bolsa Chica (8)	copper and nickel	Pollutant levels exceed numeric objectives for copper (100%, n=4) and nickel (100%, n=4)	N	L
Anaheim Bay (8)	copper, nickel, dieldrin, and PCBs	Pollutant levels exceed numeric objectives for copper (100%, n=4) and nickel (100%, n=4). Dieldrin and PCB levels exceeded maximum tissue residue levels in 100% of available samples (n=2).	N	L
Huntington Harbour (8)	copper, nickel, dieldrin, and PCBs	Pollutant levels exceed numeric objectives for copper (100%, n=4) and nickel (75%, n=4). Dieldrin and PCB levels exceeded maximum tissue residue levels in 100% of available samples (n=4).	Y	L

Review of California's 2002 Section 303(d) Water body List

*Enclosure to letter from Alexis Strauss, EPA Region 9 to
Celeste Cantú, State Water Resources Control Board*

Date of Transmittal Letter From State: February 28, 2003

Date of Receipt by EPA: March 3, 2003

Dates of Supplemental Transmittals From State: March 10, 2003, March 11, 2003, April 10, 2003, April 14, 2003 and April 22, 2003

Purpose

The purpose of this review document is to describe the rationale for EPA's partial approval and partial disapproval of California's 2002 Section 303(d) water quality limited waters list. The following sections identify those key elements to be included in the list submittal based on the Clean Water Act and EPA regulations (see 40 C.F.R. ' 130.7). EPA reviewed the methodology used by the State in developing the 303(d) list and California's description of the data and information it considered. EPA's review of California's 303(d) list is based on EPA's analysis of whether the State reasonably considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

Statutory and Regulatory Background

Identification of WQLSs for Inclusion on Section 303(d) List

Section 303(d)(1) of the Act directs States to identify those waters within its jurisdiction for which effluent limitations required by Section 301(b)(1)(A) and (B) are not stringent enough to implement any applicable water quality standard, and to establish a priority ranking for such waters, taking into account the severity of the pollution and the uses to be made of such waters. The Section 303(d) listing requirement applies to waters impaired by point and/or nonpoint sources, pursuant to EPA's long-standing interpretation of Section 303(d).

EPA regulations provide that States do not need to list waters where the following controls are adequate to implement applicable standards: (1) technology-based effluent limitations required by the Act, (2) more stringent effluent limitations required by federal, State or local authority, and (3) other pollution control requirements required by State, local, or federal authority. See 40 CFR 130.7(b)(1).

Consideration of Existing and Readily Available Water Quality-Related Data and Information

In developing Section 303(d) lists, States are required to assemble and evaluate all existing and readily available water quality-related data and information, including, at a minimum, consideration of existing and readily available data and information about the following categories of waters: (1) waters identified as partially meeting or not meeting

designated uses, or as threatened, in the State's most recent Section 305(b) report; (2) waters for which dilution calculations or predictive modeling indicate nonattainment of applicable standards; (3) waters for which water quality problems have been reported by governmental agencies, members of the public, or academic institutions; and (4) waters identified as impaired or threatened in any Section 319 nonpoint assessment submitted to EPA. See 40 CFR 130.7(b)(5). In addition to these minimum categories, States are required to evaluate any other water quality-related data and information that is existing and readily available. EPA's 1991 Guidance for Water Quality-Based Decisions describes categories of water quality-related data and information that may be existing and readily available (see, EPA 1991, Appendix C). While States are required to evaluate all existing and readily available water quality-related data and information, States may decide to rely or not rely on particular data or information in determining whether to list particular waters.

In addition to requiring States to assemble and evaluate all existing and readily available water quality-related data and information, EPA regulations at 40 CFR 130.7(b)(6) require States to include as part of their submissions to EPA documentation to support decisions to use or not use particular data and information and decisions to list or not list waters. Such documentation needs to include, at a minimum, the following information: (1) a description of the methodology used to develop the list; (2) a description of the data and information used to identify waters; and (3) any other reasonable information requested by the Region.

Priority Ranking

EPA regulations also codify and interpret the requirement in Section 303(d)(1)(A) of the Act that States establish a priority ranking for listed waters. The regulations at 40 CFR 130.7(b)(4) require States to prioritize waters on their Section 303(d) lists for TMDL development, and also to identify those WQLSs targeted for TMDL development in the next two years. In prioritizing and targeting waters, States must, at a minimum, take into account the severity of the pollution and the uses to be made of such waters. See Section 303(d)(1)(A). As long as these factors are taken into account, the Act provides that States establish priorities. States may consider other factors relevant to prioritizing waters for TMDL development, including immediate programmatic needs, vulnerability of particular waters as aquatic habitats, recreational, economic, and aesthetic importance of particular waters, degree of public interest and support, and State or national policies and priorities. See 57 FR 33040, 33045 (July 24, 1992), and EPA 1991.

Analysis of California's Submission

Identification of Waters and Consideration of Existing and Readily Available Water Quality-Related Data and Information.

EPA has reviewed the State's submission, and has concluded that the State developed its Section 303(d) list in partial compliance with Section 303(d) of the Act and 40 CFR 130.7. Because California's submission does not include all waters that meet Section 303(d) listing requirements, its list is being partially approved and partially disapproved, and the additional waters and pollutants that meet the listing requirements are being added to the State's 2002 list. EPA's review is based on its analysis of whether the State reasonably

considered existing and readily available water quality-related data and information and reasonably identified waters required to be listed.

California used its 1998 Section 303(d) list as its starting point for its 2002 list revision. The State based its 2002 Section 303(d) submittal on its analysis of readily available data and information to determine whether additions to or deletions from the 1998 list were necessary (listing report, pp. 2-3). The State determined that waters listed in 1998 should be retained on the Section 303(d) list unless (1) new data and information supported a finding that listing requirements are no longer met, (2) errors in the analysis supporting the 1998 listing were identified, (3) other enforceable control requirements would result in attainment of water quality standards, or (4) TMDLs had been completed by the State for a water-pollutant combination. As a result, many waters were retained on the 2002 Section 303(d) list without extensive analysis. EPA concludes that this incremental listing approach is consistent with federal requirements because the State is making the environmentally conservative assumption that previously listed waters are water quality limited segments (WQLSs) absent more recent data or information supporting a different finding.

Assembly of Data and Information

The State devoted considerable effort to assembling new data and information sources for the 2002 list revision (see listing report, pp. 3-15). Regional Board staff compiled data and information from multiple sources, including each of the data and information categories identified at 40 CFR 130.7(b)(5). The State also solicited data and information from the public beginning in March 2001 and ending in June 2002, and considered the voluminous material submitted by the public in response to the solicitation as part of the listing assessment. The solicitation was mailed to an extensive mailing list, advertised in newspapers, and posted on State and Regional Board web sites. The State considered some data and information submitted by the public after the June 2002 deadline, but in most cases limited its analysis to data and information obtained by June 2002. EPA finds that it was generally reasonable for the State to limit its analysis to data and information assembled or submitted during the data solicitation period because the State needed a reasonable amount of time to consider the large amount of data and information in the record and to develop listing recommendations. EPA concludes it was reasonable for the State to provide a 6-month period to assemble the listing proposal following the close of data and information solicitation period. Data and information sources assembled and considered by the State are specifically identified in each of the Regional Board staff reports, as well as the water body fact sheets and reference lists included in Volume II of the list submission.

The State generally focused on data that became available after 1997 because the 1998 listing analysis focused on data and information that were available before 1997. In some cases, the State considered older data as part of its 2002 listing assessments, depending upon the pollutants at issue, the types of data (e.g., sediment vs. water column data), and the availability of more recent data and information. EPA finds it reasonable for the State to make its assessment based on water quality data generally collected during this timeframe because the more recent ambient water quality data are more likely to be representative and indicative of current water quality conditions. EPA notes, however, that it may be reasonable to consider sediment and tissue data that are older than five years in age because these media usually are longer-term indicators of chemical contamination than are ambient water column data, and provide reliable information for assessing water quality conditions

for a longer period of time.

The State developed several hundred water body fact sheets for waters and pollutants for which new data and information were assembled for the 2002 list review. These fact sheets summarized the applicable standards, the available data and information, the basis for the State's assessment of the available data and information, and the listing recommendation. These fact sheets provided a good summary of the listing assessment in most cases. The State's responses to comments concerning several of these assessments provide supplemental information explaining the basis for the State's conclusions. In a few cases, EPA requested and received additional explanations of State listing decisions and/or the underlying data summarized in the fact sheets. EPA reviewed these data as necessary to ensure the basis for each water body assessment was sufficiently clear.

The State's listing decisions are consistent with the conclusions of the most recent Section 305(b) report submitted in 2000 because the State conducted one integrated analysis to support preparation of the Section 305(b) Report and Section 303(d) List. The 2002 Section 305(b) report had not been completed at the time of the final Section 303(d) listing submittal. The State has not updated its Section 319 assessment in several years, and EPA found in its review of the 1998 Section 303(d) list that that listing decision was consistent with or had superseded the most recent Section 319 assessment. As the State used the 1998 list as the basis for the 2002 list, the Section 303(d) listing decisions remain consistent with, or reasonably supersede, the assessment conclusions of the now-outdated Section 319 assessment.

Listing Methodology

The list submittal summarizes the listing methodology used by California to update the 2002 list. The State did not develop and apply a standardized listing methodology that specified firm rules for determining whether waters should be listed under section 303(d) or placed on the State's monitoring list or enforceable programs list. Instead, the State applied a weight of evidence approach through which the State assessed the unique data and information profile available for each water-pollutant combination in comparison with applicable water quality standards. This approach enabled the State to consider how different lines of evidence and levels of data quantity and quality combine to support an assessment of whether different waters exceed water quality standards. This approach also:

- requires more detailed and laborious documentation (on a water-by-water basis) than might be needed if a more standardized methodology were applied,
- requires more attention to ensure there are valid reasons for making different assessment determinations for different waters in similar factual situations, and
- was more difficult for EPA to review and analyze.

Although the State did not apply strict decision rules in making 2002 listing decisions, it applied several general assessment factors to help ensure consistency in listing assessments. These factors are discussed in detail in the listing report (listing report, pp. 4-15) and include:

- waterbody identification information,
- pollutant or stressor type,
- applicable water quality standards/beneficial use information,
- data quality,

- linkage between measurements and applicable standards,
- utility of available measurements for judging standards attainment,
- availability of data and information,
- considerations in analysing data and information (e.g. sample size),
- temporal and spatial representation of available data,
- use of standard analytical methods for data analysis,
- pollutant source(s), and
- the availability of an alternative enforceable program to address the impairment.

Although the state did not require minimum sample sizes in order to assess water quality conditions, the State was more likely to list waters with larger data sets and in cases where data quality was clearly documented. In general, more data and higher exceedance frequencies were expected before listing conventional pollutants on the Section 303(d) list. Less data and lower exceedance frequencies were expected to support listings of toxic pollutants. Particularly in the case of toxic pollutants, the State carefully considered, and was willing to list based on, contaminated sediment and fish tissue data. The State applied generally accepted screening guidelines developed by agencies in California or elsewhere in considering these other data types and evaluating narrative standards exceedances. These approaches are generally consistent with EPA's technical assessment guidance documents (EPA 1997 and EPA 2001).

EPA concludes that the State's weight-of-evidence approach, backed by the preparation of detailed fact sheets and responses to comments, is consistent with the federal requirement that the State specify its listing methodologies as part of the listing decision.

EPA carefully reviewed the State's individual water body assessments for consistency with federal listing requirements. EPA found that the State's assessments were consistent with federal requirements and State water quality standards in more than 99% of the individual water body cases. The data and information available for most waters clearly supported conclusions that water quality standards were or were not exceeded. There were several dozen waters for which it was less clear that the available evidence supported conclusions that water quality standards were not exceeded. EPA identified most of these waters in its comments to the State during the public comment period and requested that the State clarify the data and information available for these waters and its rationale for not listing them. EPA also identified a few waters based on its review of the final list submission and responsiveness summary for which there was some evidence of potential standards exceedances, but the State had not provided a clear rationale for not listing them. EPA requested that the State also clarify the data and information available for these waters and its rationale for not listing them.

The State did a good job of responding to these requests. Based on its reviews of the supplemental data and information provided by the State and its reviews of information in the State's listing record for certain waters, EPA concluded that the vast majority of State listing decisions were consistent with federal listing requirements. In a few cases, discussed in more detail below, EPA concluded that the State had not provided a reasonable explanation for not listing these waters and that the available data and information instead supported a conclusion that these waters meet federal listing requirements.

EPA identified several concerns about California's proposed listing decisions during the list development process. EPA worked closely with the State during the listing process and was able to resolve most of these issues. As a result, EPA is able to approve all of California's decisions to list waters and pollutants, and almost all its decisions not to list other waters and pollutants. The attached "Summary of Resolution of Issues Raised by EPA Concerning California's Draft 2002 303(d) List" discusses the issues raised by EPA and the eventual resolution of these issues. The basis for EPA's decisions to add several waters is discussed in greater detail in the following section.

In summary, EPA has reviewed California's description of the data and information it considered, its methodology for identifying waters, and the State's responsive summary. EPA concludes that the State's decisions to list the waters and pollutants identified in Table 27 of its listing submittal are consistent with federal listing requirements. EPA's decision to approve these listings does not mean that EPA concurs with or is taking any action with respect to the State's listing methodology. EPA considered the State methodology in its decision to approve the waters and pollutants listed by the State. However, EPA also reviewed the data and information provided by the State as part of its listing submittal to determine whether the State listed all waters or pollutants that do not attain State water quality standards and meet federal listing requirements. EPA concludes that the State's decision not to list several waters and pollutants is inconsistent with federal listing requirements. As discussed below, the available data and information are sufficient to support a conclusion that these waters are water quality limited and need to be listed pursuant to Section 303(d).

The State properly listed waters with nonpoint sources causing or expected to cause impairment, consistent with Section 303(d) and EPA guidance. Section 303(d) lists are to include all water quality limited segments (WQLSs) still needing TMDLs, regardless of whether the source of the impairment is a point and/or nonpoint source. EPA's long-standing interpretation is that Section 303(d) applies to waters impacted by point and/or nonpoint sources. In *Pronsolino v. Marcus*, the District Court for the Northern District of California held that section 303(d) of the Clean Water Act (CWA) authorizes EPA to identify and establish total maximum daily loads (TMDLs) for waters impaired by nonpoint sources. *Pronsolino et al. v. Marcus et al.*, 91 F.Supp.2d 1337, 1347 (N.D.Ca. 2000), *aff'd*, *Pronsolino v. Nastri*, 291 F.3d 1123 (9th Cir 2002). See also EPA's 1991 Guidance and National Clarifying Guidance for 1998 Section 303(d) Lists, Aug. 27, 1997.

Rationale for Adding Waters to California's List

This section describes the basis for EPA's decisions to (1) disapprove the State's decision to not list several water bodies and/or pollutants for currently listed water bodies, and (2) identify these water bodies for inclusion on the final 2002 Section 303(d) list with associated priority rankings. EPA analyzed the State's water body assessments and supporting rationales to determine whether the State's decisions not to list the waters were consistent with federal listing requirements and the provisions of state water quality standards. EPA generally applied the listing criteria contained in EPA's water quality assessment guidance documents in determining whether waters are water quality limited (EPA, 1997 and EPA, 2001). These guidance documents generally provide that waters should be listed due to potential aquatic life use impairments in cases where toxic pollutant

standards are exceeded in 2 or more samples in a three-year period, and conventional pollutant standards are exceeded in more than 10% of available samples. Where necessary, EPA has interpreted narrative standards to evaluate pollutants for which numeric standards are not in place. For fish tissue analysis, EPA has considered the same screening guidelines applied by the State (e.g., maximum tissue residue levels (MTRLs) for fish). For nutrients, EPA reviewed available guidance concerning protective nutrient levels, as discussed under the individual water body discussions below.

EPA will solicit public comments on these additions to California's list, and, following consideration of any comments received, will transmit the final list to California for incorporation in the State's water quality management plan. The basis for adding individual waters and pollutants and the basis for the priority rankings are discussed for each water and pollutant to be added to the list.

Humboldt Bay PCBs (RB 1)

The North Coast Basin Plan contains a narrative water quality standard that prohibits pollutants at levels toxic to aquatic life or human health (North Coast RWQCB, 1993, pp. 3-4.00). The State used maximum tissue residue levels (MTRLs) as a screening method to evaluate whether pollutant levels in fish exceeded safe levels, and EPA concurs that MTRLs are appropriately used for this purpose. EPA's review of available fish tissue data for Humboldt Bay found that MTRLs for PCBs were exceeded in 4 out of 5 samples. Available data and MTRLs were not divided by individual PCB compound, therefore this analysis focuses on PCBs as a group. We note the State listing methodology suggests that "for measurements that integrate environmental conditions (like measurements of contaminants in fish tissue) at least two samples were usually sufficient (to support an assessment)" (listing report, p. 7). EPA concludes that these data provide a sufficient basis for concluding that the narrative water quality standard for toxicity contained in the North Coast Region Basin Plan is exceeded.¹ The State provided an insufficient rationale to support its conclusion that inadequate data were available to support a listing. EPA is establishing a low priority ranking for this listing based on the judgement that there is no direct evidence of beneficial use impacts in the record at this time and additional monitoring and assessment are appropriate to verify this listing before developing a TMDL.

Laguna de Santa Rosa Total Nitrogen and Total Phosphorus (RB1)

EPA is identifying Laguna de Santa Rosa for inclusion on the 303(d) list for total nitrogen and total phosphorus based on the very high nutrient levels observed in available samples. EPA concludes that the nitrogen and phosphorus levels found in the Laguna far exceed the levels associated with excessive aquatic growths that can adversely affect beneficial uses, and that the Basin Plan narrative water quality standard for biostimulatory substances is violated (see North Coast RWQCB, 1993, p. 3-3.00). EPA also notes that the high nutrient levels likely contribute to the very low DO levels observed by the State, which resulted in the State's listing of the Laguna for DO. The State's rationale for not listing the water for nutrients because there are no numeric water quality objectives in place is inconsistent with the requirement of 40 CFR 130.7(b)(3), which requires States to evaluate potential violations of narrative standards in developing the Section 303(d) list.

¹ California's Basin Plans refer to narrative and numeric water quality standards as "objectives".

EPA understands that it is difficult to determine the exact nutrient levels that would be protective of the receiving water. In the absence of a numeric water quality standard in the North Coast Basin Plan, EPA judged that it would be reasonable to apply (for screening purposes) the numeric total nitrogen objective of 1.0 mg/L found in the San Diego Regional Basin Plan, which is generally consistent with protective nitrogen levels identified in the literature and applied in recent nutrient TMDLs for coastal streams in California (e.g., Dodds and Welch, 2000, EPA 2003). Our review found that nitrogen levels in the Laguna exceeded the 1.0 mg/L screening value in 93% of available samples, usually by a wide margin (n=323).

For total phosphorus, EPA applied for screening purposes the 0.1 mg/L value applied by the Regional Board staff and used in recent phosphorus TMDLs for coastal California Streams (EPA, 2003). The Regional Board staff's analysis contained in its staff report found that phosphorous levels exceeded the 0.1 mg/L screening value in 88% of samples, usually by a very wide margin (n=324). We also note that Regional Board staff recommended listing the Laguna for nitrogen and phosphorous, and found no analysis in the State Board decision to refute the Regional Board staff assessment.

We note the Laguna is also listed for DO and believe it will be feasible to develop TMDLs that simultaneously address the DO, nitrogen, and phosphorous listings. As the DO TMDL was given a low priority ranking by the State, we are setting a low priority for the nitrogen and phosphorus TMDLs as well.

Lake Merced Dissolved Oxygen and pH (RB 2)

The San Francisco Bay Basin Plan includes numeric standards for dissolved oxygen and pH that are applicable to this water (San Francisco Bay RWQCB, 1995, p. 3-3). EPA's analysis of available data in the State's record found that 46-83% of available samples exceed the existing numeric water quality standards for DO and pH in Lake Merced, depending upon the monitoring station (n=14). The State has not provided a sound rationale for concluding that the water quality standards for pH and DO are not exceeded. The stated rationale that the available data may not be representative is unpersuasive. Data were collected at several locations over a recent multi-year time frame. The rationale that samples taken at depth should not be considered and that analysis only of surface samples demonstrates attainment is also unpersuasive because the Basin Plan includes no provisions indicating that these standards are to be applied only at the surface. EPA concludes that absent Basin Plan language to the contrary, these standards apply at all water depths. Based on these considerations, EPA has determined that this water should be identified for inclusion on the list for pH and DO. EPA is establishing a low priority for this listing based on the considerations that no specific beneficial use impairments have been associated with DO and pH problems in the Lake, and that additional monitoring is warranted to verify these listings prior to developing TMDLs.

Lake Merritt Dissolved Oxygen (RB 2)

The San Francisco Bay Basin Plan includes numeric standards for dissolved oxygen that are applicable to this water (San Francisco Bay RWQCB, 1995, p. 3-3). EPA's analysis

of available data in the State's record found that 24% of available samples exceed the existing numeric water quality standards for DO in Lake Merritt (n=126). The State has not provided a sound rationale for concluding that the water quality standards for DO are not exceeded. EPA notes that Lake Merritt was listed in 1998 for DO, and the State has provided no analysis showing that the basis for the previous listing was in error. In its other listing decisions, the State retained on its 2002 list waters listed in 1998 unless there was a sound basis for determining that the water now meets standards or that the prior listing was in error.

The State has not determined that the available data are insufficient to support an assessment. The rationale that samples taken at depth should not be considered and that analysis only of surface samples demonstrates attainment is also unpersuasive because the Basin Plan contains no provisions indicating that the DO standard does not apply at all water depths. Based on these considerations, EPA has determined that this water should be identified for inclusion on the list for DO. EPA is establishing a low priority for this listing based on the considerations that the other State listing for Lake Merritt was assigned a low priority and that additional monitoring may be warranted regarding the DO listing prior to developing TMDLs.

San Francisco Bay Nickel North of South San Francisco Bay (RB 2)

The currently applicable Basin Plan chronic water quality standard for nickel San Francisco Bay north of the South San Francisco Bay segment is 7.1 mg/L total recoverable nickel (San Francisco Bay RWQCB, 1995, p. 3-9). The State's analysis of available data found that this standard has been exceeded 102 times since 1993 (Regional Board staff report, cited in Fleck, 2003). The State erroneously applied the CTR dissolved nickel criterion in assessing the data, and reached the conclusion that the Bay meets the nickel standards based on the application of an inapplicable standard. EPA is identifying the following segments for inclusion on the Section 303(d) list based on the State's analysis of available nickel data in comparison with the applicable Basin Plan objective:

- Sacramento San Joaquin Delta (portion in San Francisco Bay Region),
- Lower San Francisco Bay,
- San Pablo Bay, and
- Suisun Bay.

EPA is establishing a low priority ranking for this listing as the State is in the process of developing site specific water quality standards for nickel that will likely be attained. Therefore, it is most reasonable to proceed with water quality standards modification that will likely obviate the need to complete a nickel TMDL for the Bay.

Chumash Creek Dissolved Oxygen (RB 3)

The Central Coast Basin Plan includes a numeric water quality standard for dissolved oxygen that is applicable to this water (Central Coast RWQCB, 1995, p. III-4). The fact sheet indicates that the standard was exceeded in 15% of samples (n=230). These data provide sufficient evidence that the water is impaired and should be listed, consistent with EPA's 1997 water quality assessment guidance. The fact sheet developed by the State for this water concludes that there is a high confidence that DO standards were exceeded. The State has not provided a sound rationale for concluding that the water quality standards for

DO are not exceeded. Accordingly, EPA is identifying this water for inclusion on the list for DO. EPA is establishing a low priority ranking for this listing based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDL.

Llagas Creek Dissolved Oxygen (RB 3)

The Central Coast Basin Plan includes a numeric water quality standard for DO that is applicable to this water (Central Coast RWQCB, 1995, p. III-4). The fact sheet developed by the State for this water reports that the DO standard was exceeded in 18% of samples (n=90). This data provides sufficient evidence that the water is impaired and should be listed, consistent with EPA's 1997 water quality assessment guidance. The State has not provided a sound rationale for concluding that the water quality standards for DO are not exceeded. Accordingly, EPA is identifying this water for inclusion on the list for DO. EPA is establishing a low priority ranking for this listing based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDL.

Los Osos Creek Dissolved Oxygen (RB 3)

The Central Coast Basin Plan includes a numeric water quality standard for DO that is applicable to this water (Central Coast RWQCB, 1995, p. III-4). The fact sheet developed by the State for this water reports that the DO standard was exceeded in 18% of samples (n=251). This data provides sufficient evidence that the water is impaired and should be listed, consistent with EPA's 1997 water quality assessment guidance. The State has not provided a sound rationale for concluding that the water quality standards for DO are not exceeded. Accordingly, EPA is identifying this water for inclusion on the list for DO. EPA is establishing a low priority ranking for this listing based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDL.

Orcutt Solomon Creek Boron (RB 3)

The Central Coast Basin Plan includes a numeric water quality standard for boron that is applicable to this water (Central Coast RWQCB, 1995, p. III-9). The fact sheet developed by the State for this water reports that the boron standard was exceeded in 15% of samples (n=34). This data provide sufficient evidence that the water is impaired and should be listed, consistent with EPA's 1997 water quality assessment guidance. The State has not provided a sound rationale for concluding that the water quality standards for boron are not exceeded. Accordingly, EPA is identifying this water for inclusion on the list for boron. EPA is establishing a low priority ranking for this listing based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDL.

San Antonio Creek Boron (RB 3)

The Central Coast Basin Plan includes a numeric water quality standard for boron that is applicable to this water. The fact sheet developed by the State for this water reports that the boron standard was exceeded in 67% of samples (n=6). This data provide sufficient evidence that the water is impaired and should be listed for this toxic pollutant, consistent with EPA's 1997 water quality assessment guidance. The State has not provided a sound rationale for concluding that the water quality standards for boron are not exceeded. Accordingly, EPA is identifying this water for inclusion on the list for boron. EPA is establishing a low priority ranking for this listing based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDL.

Calleguas Creek Reach 4 Boron, Sulfate, Total Dissolved Solids (RB 4)

The Los Angeles Region Basin Plan does not contain specific numeric water quality standards for boron, sulfate, or TDS for Calleguas Creek Reach 4 (also known as Revolon Slough Main Channel). The State's rationale for not listing—that there are no water body specific numeric standards in the Basin Plan for these pollutants—is invalid. Federal regulations at 40 CFR 130.7(b) require States to apply narrative water quality standards. The State should have applied the Basin Plan narrative standard for chemical constituents(s) to assess these pollutants. The Basin Plan includes numeric guidelines for these pollutants that are “necessary to protect different categories of beneficial uses”, including the beneficial uses designated for Calleguas Creek Reach 4 (Basin Plan, pp. 2-8 and 3-14). EPA concludes that it is appropriate to apply these numeric guidelines to evaluate potential exceedances of the narrative water quality standard for chemical constituents. Based on our review of data assembled by the State, EPA found that Reach 4 water exceeds the appropriate boron guideline in 11/13 samples, the total dissolved solids guideline in 13/15 samples, and sulfate guideline in 14/15 samples. EPA concludes that these data are sufficient to support a finding that the narrative water quality objective is not attained for these pollutants, and EPA is identifying them for inclusion on the Section 303(d) list. EPA is establishing a medium priority for this listing to coincide with the State's schedule for developing other TMDLs for listed pollutants in the Calleguas Creek basin.

San Gabriel River Reaches 1 and 3 and Coyote Creek Toxicity (RB 4)

The Los Angeles Region Basin Plan includes water quality standards for toxicity (Los Angeles RWQCB, 1994, pp. 3-16 – 3-17). As explained in EPA's comments to the State concerning its draft list, States are required to list waters that exceed a toxicity standard unless the State can demonstrate that the presence of pollutants does not cause or contribute to the observed toxicity exceedances. The State found that these segments are impaired due to toxicity and had included them on the 1998 Section 303(d) list. The State did not include them on the 2002 Section 303(d) list based on reliance on an alternative control program that the State asserted would result in attainment of the toxicity water quality standards. The State was asserting that listing of this impaired water was not required pursuant to 40 CFR 130.7(b)(1). In response to EPA's request, the State provided a supplemental explanation of the basis for its conclusion that the alternative control program would result in attainment of several applicable standards, including toxicity. EPA found that the State's basis for not listing ammonia and the nutrient compounds is reasonable, and we are approving those listing decisions.

The State concluded that pending treatment plant upgrades at several water reclamation plants would also result in attainment of toxicity standards. To support this contention, the State relied upon the results of a toxicity identification evaluation (TIE) study conducted by the Los Angeles County Sanitation Districts, which was provided for EPA review. Our review of this TIE study found that the TIE was of uncertain reliability based on the summary description provided. The TIE study concluded that ammonia was a principal but not the sole cause of toxicity in Coyote Creek, and that some toxicity was associated with exposures to organophosphate pesticides and perhaps other organic chemicals. Toxicity was observed both upstream and downstream from the treatment plant discharge point. TIE results were not submitted for San Gabriel River Reaches 1 or 3. EPA notes that the numeric effluent limitations for toxicity in the permits for the Long Beach and Los Coyotes water reclamation plants that discharge to the Coyote Creek and San Gabriel River are currently being appealed before the State Water Resources Control Board; therefore, it is uncertain whether enforceable controls will continue be in place for toxicity in the future for these facilities.

EPA concludes that the analysis provided by the State does not support a conclusion that implementation of the enforceable program to address ammonia impairments will, with a high degree of certainty, result in attainment of the water quality standards for toxicity. Therefore, the State's decision not to list these segments based on the provisions of 40 CFR 130.7(b)(1) is invalid. EPA is identifying San Gabriel River Reach 1 and Reach 3, and Coyote Creek for inclusion on the Section 303(d) list for toxicity based on these findings. EPA is establishing a medium priority for these listings to coincide with the State's TMDL development schedules for other pollutants in the San Gabriel River basin, including the TMDL for toxicity for Walnut Creek in the San Gabriel Basin. It would be appropriate to reevaluate ambient receiving water toxicity following implementation of the treatment plant upgrades later in 2003 to determine whether these segments exhibit continued toxicity.

Bolsa Chica Copper and Nickel (RB 8)

The California Toxics Rule contains numeric water quality standards for copper and nickel that are applicable to this water (65 FR No. 97, pp. 31,681-31,719). The fact sheet indicates that available copper and nickel samples exceeded the applicable numeric standards in 100% of available samples (n=4) for each pollutant. This data provides a sufficient basis for concluding that applicable numeric water quality standards are not attained, and EPA is identifying this water for inclusion on the Section 303(d) list for copper and nickel. EPA is setting a low priority for these listings as there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDLs.

Anaheim Bay Copper, Nickel, Dieldrin, and PCBs (RB 8)

The California Toxics Rule contains numeric water quality standards for copper and nickel that are applicable to this water (65 FR No. 97, pp. 31,681-31,719). The Basin Plan also contains narrative toxicity water quality standards that address potential fish tissue contamination by pesticides and PCBs (Santa Ana RWQCB, 1995, p. 4-11). EPA reviewed the data compiled by the State for Anaheim Bay and found that ambient water standards objectives for copper and nickel were exceeded in 100% of available samples for each pollutant (n=4), and that MTRLs (fish tissue screening levels) were exceeded for dieldrin and PCBs in 2 out of 2 available samples for each pollutant. The State's listing methodology indicated that in general, at least 2 samples are sufficient to support an assessment based on fish tissue data (listing report, p. 7). EPA notes that the Bay was listed in 1998 for metals and pesticides. The State generally retained on the 2002 list waters and pollutants that were included on the 1998 list unless available data and information were sufficient to support a finding that the water now meets standards or that the basis for the prior listing was flawed. EPA notes that the Regional Board staff apparently intended that this listing be continued in 2002 and stated that its delisting was an oversight (email from RWQCB to EPA, March 20, 2003). Based on these considerations, EPA concludes that the State has not shown good cause for not listing Anaheim Bay for copper, nickel, dieldrin, and PCBs. EPA is identifying this water and these pollutants on the Section 303(d) list. EPA is setting a low priority for these listings based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDLs.

Huntington Harbor Copper, Nickel, Dieldrin, and PCBs (RB 8)

The California Toxics Rule contains numeric water quality standards for copper and nickel that are applicable to this water (65 FR No. 97, pp. 31,681-31,719). The Basin Plan also contains narrative toxicity water quality standards that address potential fish tissue contamination by pesticides and PCBs (Santa Ana RWQCB, 1995, p. 4-11). EPA reviewed the data compiled by the State for Huntington Harbor and found that ambient water quality standards for copper were exceeded in 100% of available samples (n=4). Applicable objectives for nickel were exceeded in 75% of available samples (n=4). EPA also found that MTRLs (fish tissue screening levels) were exceeded for dieldrin and PCBs in 4 out of 4 available samples for each pollutant. The State's listing methodology indicated that in general, at least 2 samples are sufficient to support an assessment based on fish tissue data (listing report, p. 7). EPA notes that Huntington Harbor was listed in 1998 for metals and pesticides. The State generally retained on the 2002 list waters and pollutants that were included on the 1998 list unless available data and information were sufficient to support a finding that the water now meets standards or that the basis for the prior listing was flawed. EPA notes that the Regional Board staff apparently intended that this listing be continued in 2002 and stated that its delisting was an oversight (email from RWQCB to EPA, March 20, 2003). Based on these considerations, EPA concludes that the State has not shown good cause for not listing Huntington Harbor for copper, nickel, dieldrin, and PCBs. EPA is identifying these pollutants on the Section 303(d) list. EPA is setting a low priority for these listings based on the considerations that there is no current evidence of beneficial use impairments associated with this pollutant, and that additional monitoring may be warranted regarding the listing prior to developing the TMDLs.

Good Cause for Delisting

California did not include on its 2002 Section 303(d) list several waters included on the 1998 list, and EPA asked the State to provide rationales for its decisions not to list several previously listed waters. With the few exceptions discussed above with respect to waters being added to the list by EPA, the State has demonstrated, to EPA's satisfaction, good cause for not listing these waters, as provided in 40 CFR 130.7(b)(6)(iv). California's basis for delisting these waters is that new data and information support a conclusion that water quality standards are not exceeded. EPA carefully reviewed each of these delisting decisions and finds that the State's conclusions are consistent with federal listing requirements.

In addition to the new Section 303(d) list, California's list submission includes a monitoring list, TMDLs completed list, and enforceable programs list. The monitoring list is comparable to Part 3 in EPA's recommended Integrated Report framework (EPA, 2001). The TMDLs completed list is comparable to part 4A in the Integrated Report Framework. The enforceable programs list is comparable to part 4 B in the Integrated Report Framework. The State submitted a separate section 305(b) report to ensure compliance with its submittal requirement.

As discussed above and in the EPA staff report entitled "Summary of Resolution of Issues Raised by EPA Concerning California's Draft 2002 303(d) List" (Smith, 2003), EPA raised and California largely addressed numerous issues and questions concerning the proposed list and listing methodology.

Public Comments

EPA carefully reviewed the State's detailed responses to several thousand comments received from the public during the list development process. EPA commends the State for its intensive effort to involve the public in Section 303(d) list decision-making. EPA found the State's responses to almost all public comments reasonable and in accordance with federal listing requirements. The EPA staff report entitled "Summary of Resolution of Issues Raised by EPA Concerning California's Draft 2002 303(d) List" (Smith, 2003) discusses cases in which EPA disagreed with the State's consideration of some EPA comments. EPA also identified some waters for inclusion on the list based, in part, on data and information raised by commenters. In general, we conclude the State did an excellent job in soliciting and responding to public comments on the Section 303(d) list.

A few specific public comment issues were of interest to EPA. First, EPA reviewed the many comments concerning the addition of temperature listings for several North Coast Rivers. EPA reviewed the technical basis for the State's decision and concluded that the State's conclusion that these waters are impaired due to excessive temperature is technically and legally valid. Second, we found that the State articulated a valid basis for taking an incremental approach to list revision, and that the State's decision not to reassess every water included on the Section 303(d) list was valid.

Priority Ranking and Targeting

EPA reviewed California's priority ranking of listed waters for TMDL development, and concludes the State properly took into account appropriate ranking factors to make its

determination, including the factors required to be considered by 40 CFR 130.7(b)(4) (listing report, p. 14-15). The State's straightforward decision process for ranking the listed waters was based on Regional Board staff recommendations that were endorsed (and in one case, adjusted) by the State Board. EPA concludes that the State properly considered those factors required to be considered by Section 303(d) and applied a reasonable set of additional ranking factors, consistent with the priority ranking provisions of 40 CFR 130.7(b). In our review of the comment responsiveness summary, we found that the State provided reasonable responses to the few public comments that questioned priority ranking decisions.

EPA reviewed the State's identification of 440 water quality limited segments targeted for TMDL development in the next two years and concludes that the targeted waters (high priority) are appropriate for TMDL development in this time frame (see listing report, p. 15). Targeted waters are listed in Table 4 of the listing report. The State has targeted an appropriate mix of complex and relatively simple TMDLs addressing both point and nonpoint sources.

For those waters and pollutants added to the list by EPA, priority rankings are provided in Table 1 and described above. In general, EPA utilized the same ranking factors applied by California in making ranking decisions and also considered the fit of newly listed segments and pollutants with the priorities already set by the State for TMDLs in the vicinity of the newly listed segments.

Administrative Record Supporting This Action

In support of this decision to partially approve and partially disapprove the California's listing decisions, EPA carefully reviewed the materials submitted by California with its 303(d) listing decision and supplemental data and information provided at EPA's request. The administrative record supporting EPA's decision is comprised of the materials submitted by the State, copies of Section 303(d), associated federal regulations, supporting EPA staff memoranda, EPA guidance concerning preparation of Section 303(d) lists, EPA's past comments on California's listing methodology and draft list, and this decision letter and supporting report. EPA determined that the materials provided by the State with its submittal generally provided sufficient documentation to support our analysis and findings that the State listing decisions meet the requirements of the Clean Water Act and associated federal regulations. As necessary, EPA obtained background data and information from the State to assist in our analysis of listing decisions for several specific waters. These additional data and information sources are included in our record. We are aware that the State compiled and considered additional materials (e.g. raw data and water quality analysis reports) as part of its list development process that were not included in the materials submitted to EPA. EPA did not consider all of these additional materials as part of its review of the listing submission. It was unnecessary for EPA to consider all of the materials considered by the State in order to determine that, based on the materials submitted to EPA by the State, the State complied with the applicable federal listing requirements. Moreover, federal regulations do not require the State to submit all data and information considered as part of the listing submission.

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EPA 1997. September, 1997 guidance from Office of Water, Headquarters, US EPA regarding Guidelines for Preparation of the Comprehensive State Water Quality Assessments (305(b) Reports) and Electronic Updates: Supplement, EPA-841-B-97-002B

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EPA 1992. October 30, 1992 memorandum from Geoffrey Grubbs, Director, Assessment and Watershed Protection Division, Office of Water, EPA Headquarters, to Water Quality Branch Chiefs, Regions I - X, regarding "Approval of 303(d) Lists, Promulgation Schedules/Procedures, Public Participation."

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